CLAIMS

1. Set of elements for assembling complex structures, characterised in that it comprises a plurality of first magnetic bar elements, having a first length, a plurality of ferromagnetic elements, and a plurality of second magnetic bar elements, having a second length.

2. Set of elements according to claim 1, characterised in that the ferromagnetic elements have a symmetric tridimensional shape.

3. Set of elements according to claim 1 or 2, characterised in that the ferromagnetic elements have a spherical shape.

4. Set of elements according to one of the preceding claims, characterised in that said second length of the second bar elements corresponds to the length of the diagonal of the square comprised of four first bar elements as sides, coupled each other in correspondence of the corners of the square by four electromagnetic elements.

5. Set of elements according to one of the preceding claims 1 – 3, characterised in that said second length of the second bar elements corresponds to a integral fraction of the length of the diagonal of the square comprised of four first bar elements as sides, coupled each other in correspondence of the corners of the square by four electromagnetic elements.

6. Set of elements according to claim 5, characterised in that said integral fraction is half (1/2) of the diagonal.

7. Set of elements according to claim 5, characterised in that said integral fraction is one third (1/3) of the diagonal.

8. Set of elements according to claim 5, characterised in that said integral fraction is one fourth (1/4) of the diagonal.

9. Set of elements according to one of the preceding claims 1 – 3, characterised in that said second length of the second bar elements is the half (1/2) of the diagonal of the square comprised of four first bar elements as sides, coupled each other in correspondence of the corners of the square by four electromagnetic elements, minus one of the main dimensions of said ferromagnetic element.

10. Set of elements according claim 9 when depending on claim 3, characterised in that said main dimension is the diameter of the sphere.

11. Set of elements according to claim 9 or 10, characterised in that said ferromagnetic elements are used both as vertex of the complex figures and as coupling elements for said second bar elements provided along said diagonals.

12. Set of elements according to one of the preceding claims 9 – 11, characterised in that said ferromagnetic elements are used both as vertex of the complex figures and as coupling elements of at least two of said second bar elements, in such a way to couple with the same second bar elements at the centre of complex figures.

13. Set of elements according to claim 12, characterised in that the main dimension of said ferromagnetic elements corresponds to about $(\sqrt{3} - \sqrt{2})$ times the length of the corner used to create a complex figure, said corner length being the distance between the centres of the two ferromagnetic elements used.

14. Set of elements according to one of the preceding claims, characterised in that it provides second ferromagnetic elements having dimensions different with respect to those of the first ferromagnetic elements.

15. Set of elements according to claim 14, characterised in that said second ferromagnetic elements are used as coupling elements for said second bar elements provided along the diagonals of the figures.

16. Set of elements according to claim 14 or 15, characterised in that said second ferromagnetic elements are used as coupling elements provided in such a way to couple at the centre of complex figures.

17. Set of elements according to one of the preceding claims, characterised in that said first bar elements have an octagonal cross-section.

18. Set of elements according to one of the preceding claims, characterised in that said second bar elements have an octagonal cross-section.

19. Set of elements according to one of the preceding claims, characterised in that said first bar elements and/or said second

bar elements have an outer cover, said cover does not cover the basis of the bar element.

20. Set of elements according to one of the preceding claims 1 - 18, characterised in that said first bar elements and/or said second bar elements can have an outer cover that can partially or completely include the basis, said cover being preferably comprised of plastic material.

21. Set of elements according to claim 19 or 20, characterised in that, the ferromagnetic elements are comprised of steel.

22. Set of elements according to each one of the preceding claims, substantially as illustrated and described.